

FIG. 1

- 101 image input unit;
- 101a to 101n camera;
- 102 face region detecting unit;
- 103 face feature extracting unit;
- 104 person recognizing unit;
- 105 registration information holding unit;
- 106 output apparatus;

FIG. 3

301 image input unit;
301a to 301n camera;
302a to 302n face region detecting unit;
304 photograph judging unit;
303a to 303n face feature extracting unit;
305 person recognizing unit;
306 registration information holding unit;
307 output apparatus;

FIG. 4

401 image input unit;
401a to 401n camera;
404a to 404n face region detecting unit;
403 face feature point predicting unit;
405 face feature extracting unit;
402a to 402n face feature point detecting unit;
406 person recognizing unit;
407 registration information holding unit;
408 output apparatus;

FIG. 5

501 image input unit;
501a to 501n camera;
502 face region detecting unit;
503 face-direction predicting unit;
504 registration information holding unit;
505 output apparatus;

FIG. 7

- S1 input images from "n" sets of cameras;
- S2 extract face feature points;
- S3 feature point which could not be extracted is present?
- S4 at least two pieces of respective feature points can be detected?
- S5 calculate three-dimensional positions of feature points whose corresponding
relationship can be established;
- S6 convert three-dimensional coordinate into feature points viewed from other
cameras based upon three-dimensional positions;
- S7 extraction of feature point succeeds;
- S8 predicting process operation is accomplished;
- S9 extraction of feature point fails;

FIG. 9

- 901a camera 1, face detection result,
user "A" --- bad, user "B" --- good;
- 901b camera 2, face detection result,
user "A" ---good, user "B" --- bad;
- 901c camera 3, face detection result,
user "A" --- good, user "B" --- bad;
- 902 user "A";
- 903 user "B";

FIG. 10

- 1001 image input unit;
- 1001a to 1001n camera
- 1002a to 1002n face feature point detecting unit;
- 1003 others mixture judging unit;

FIG. 11

1001a to 1001n camera

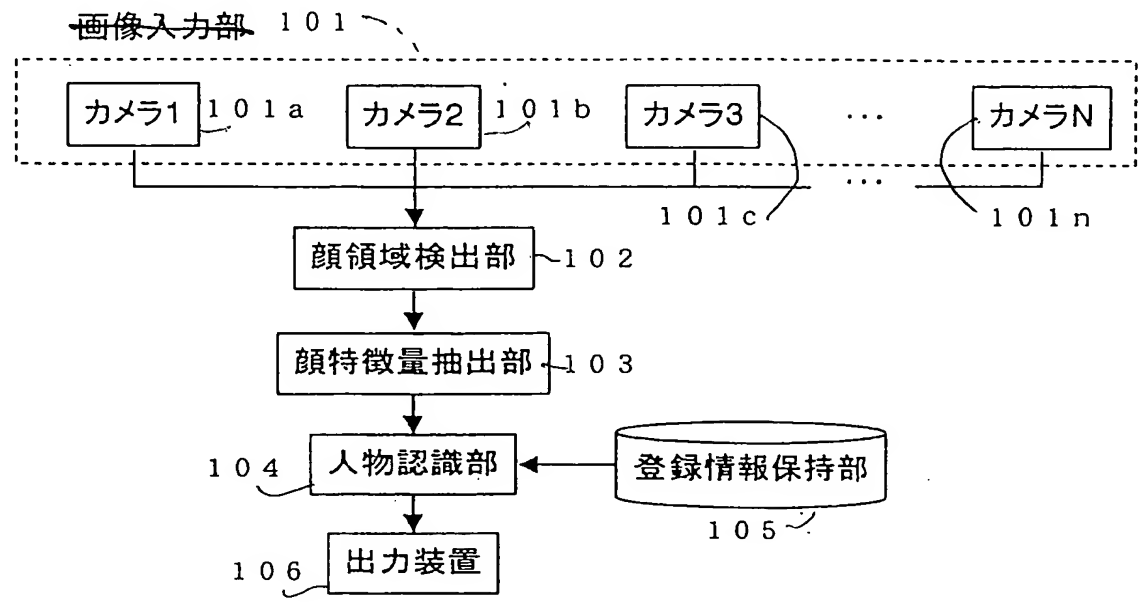
1002a to 1002n face feature point detecting unit;

1003 others mixture judging unit;

【書類名】 図面

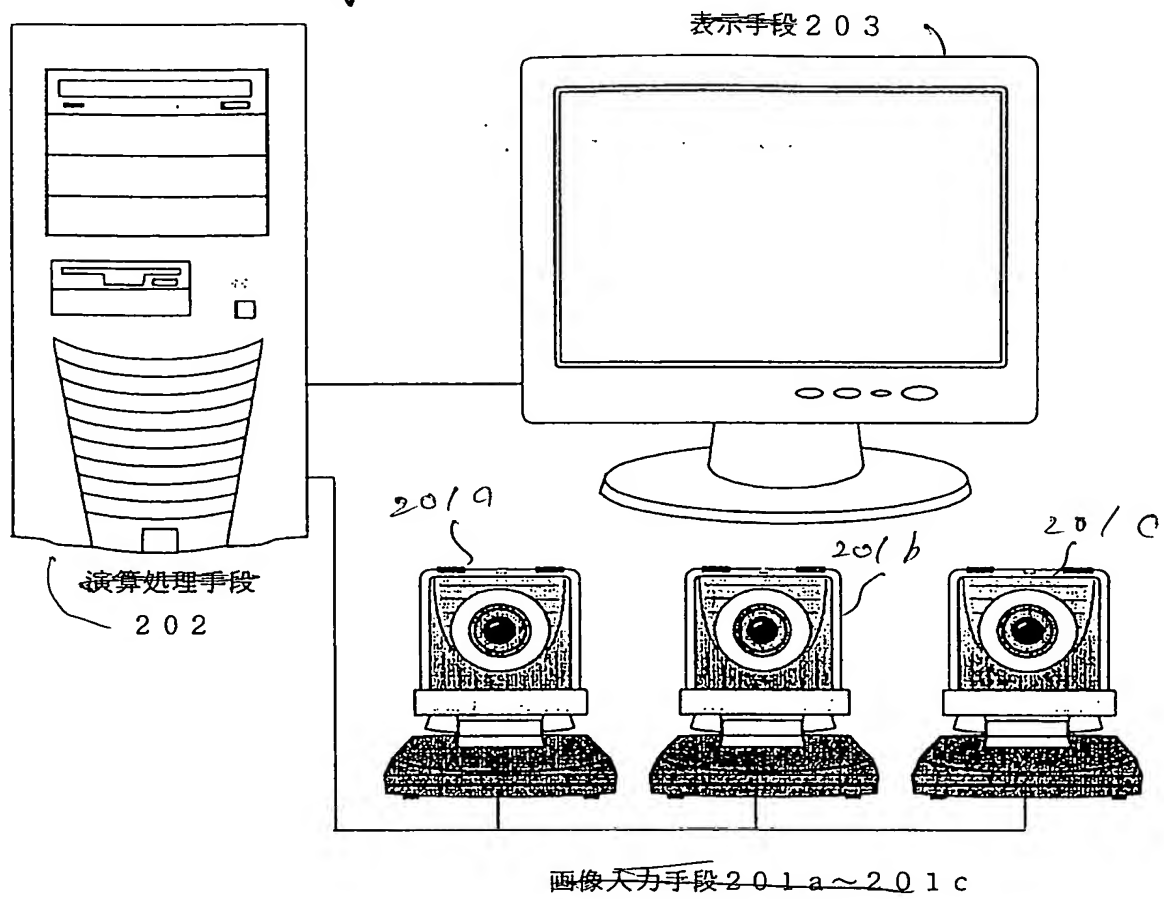
【図1】

Fig-1

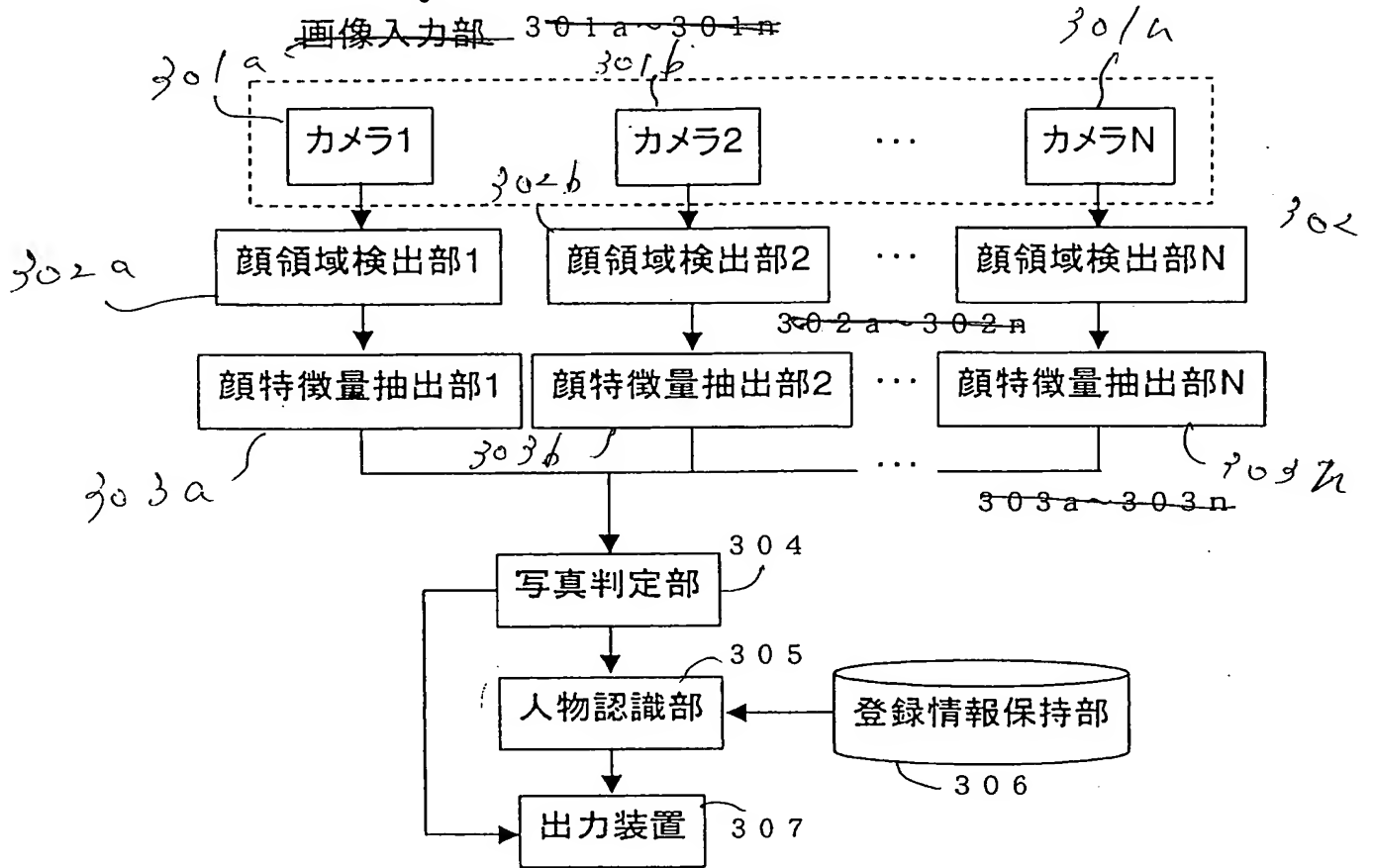


【図2】

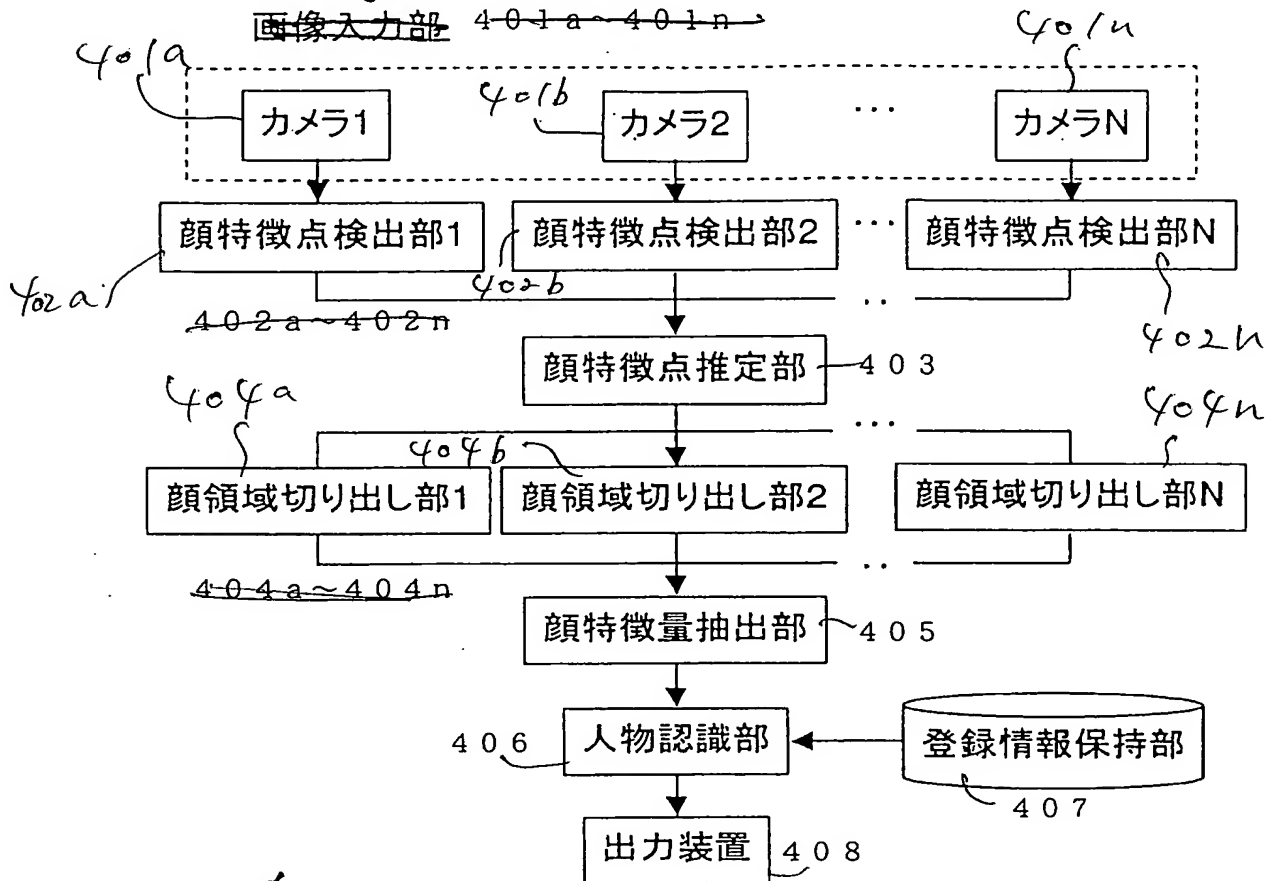
Fig. 2



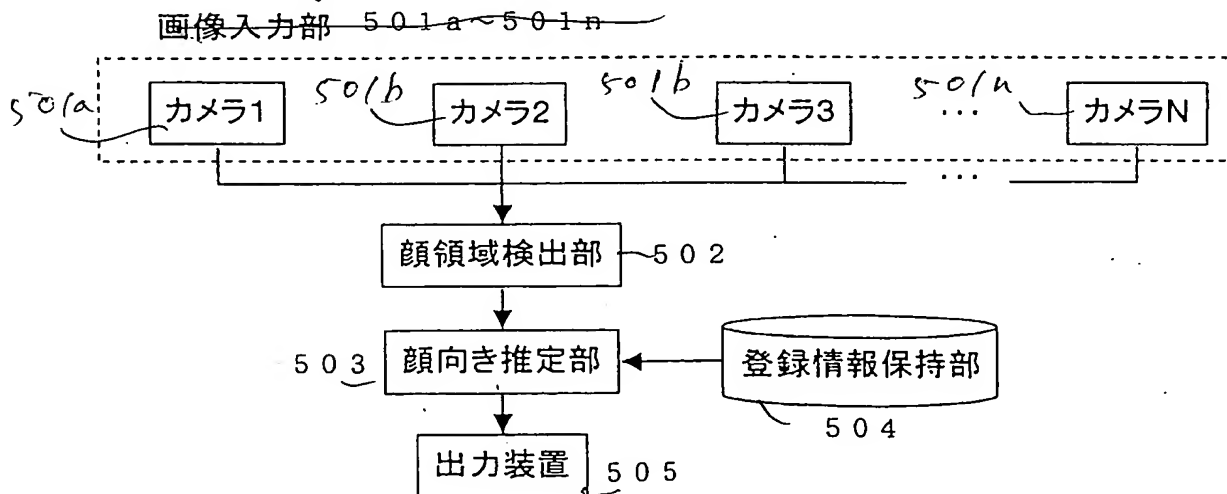
【図3】 Fig. 3



【図4】 Fig. 4

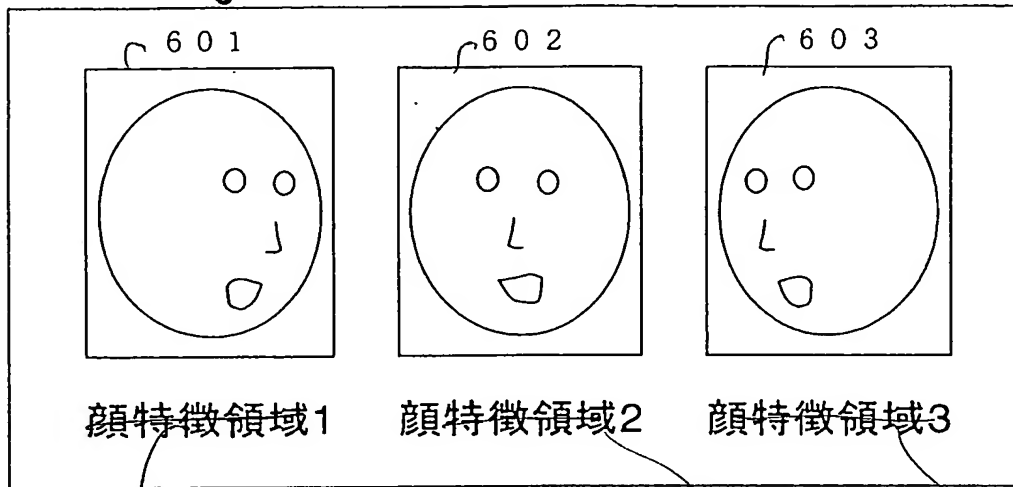


【図5】 Fig. 5



【図6】

Fig. 6



顔特徴領域集合

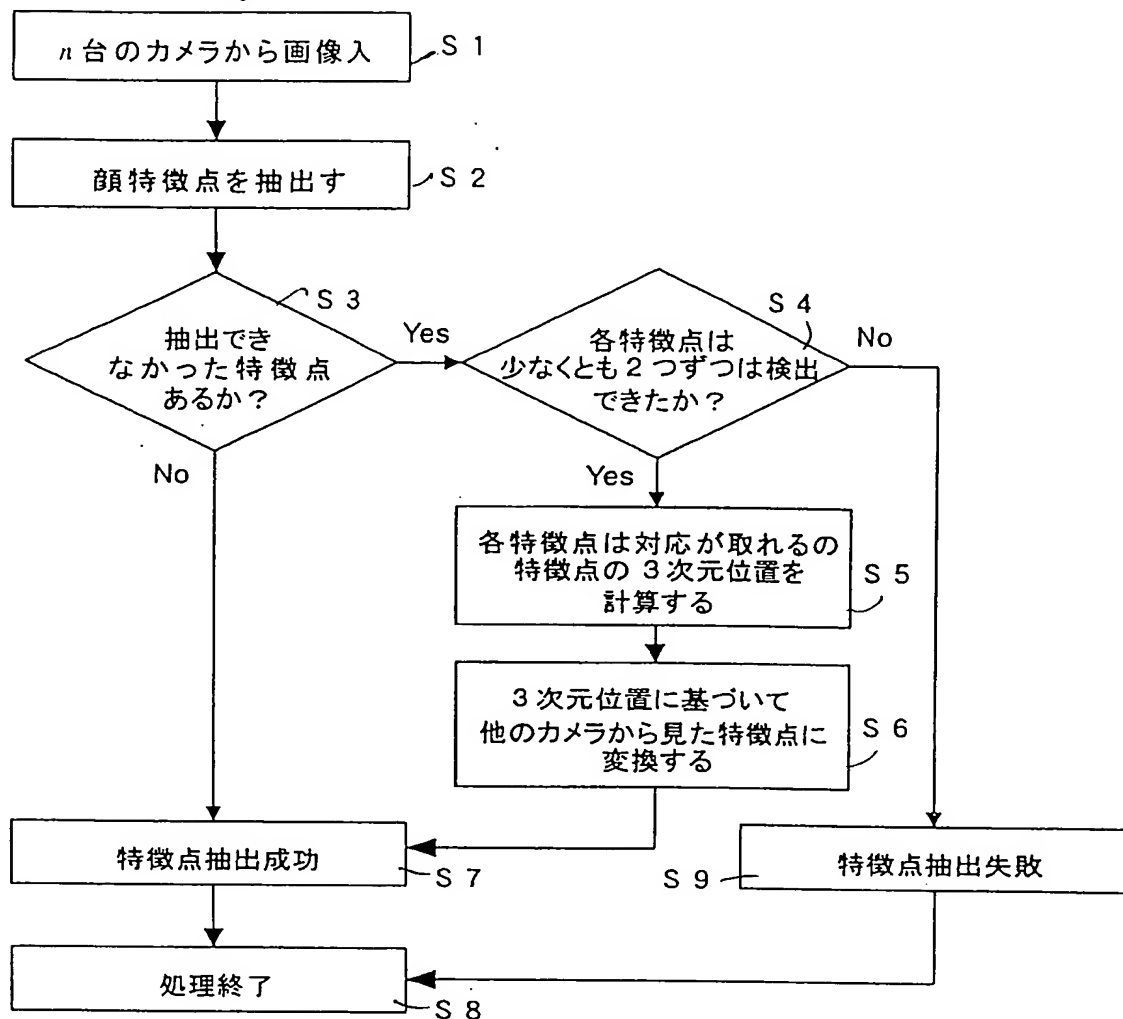
FACE
FEATURE
REGION 1

FACE FEATURE
REGION SET

FACE
FEATURE
REGION 2

FACE
FEATURE
REGION 3

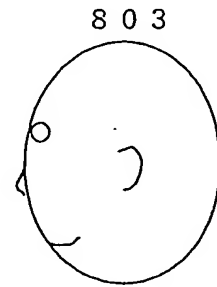
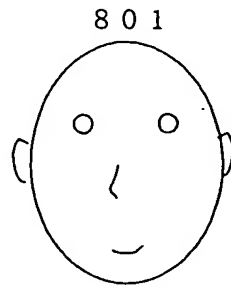
【図7】 Fig.7



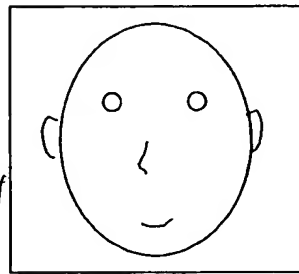
【図8】

Fig. 8

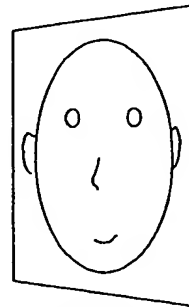
実際の顔
ACTUAL
FACES



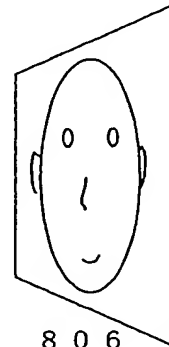
写真の顔
PHOTOGRAPH
FACES



804



805



806

【図9】

Fig. 9

カメラ1 顔検出結果

ユーザA ×

ユーザB ○

カメラ2 顔検出結果

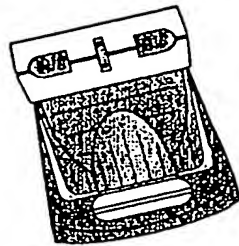
ユーザA ○

ユーザB ×

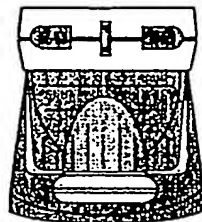
カメラ3 顔検出結果

ユーザA ○

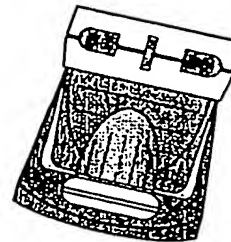
ユーザB ×



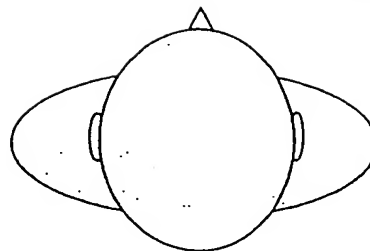
901a



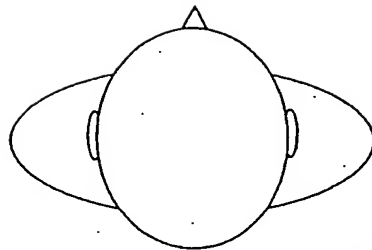
901b



901c



902:ユーザA



903:ユーザB

Fig. 10

【図10】

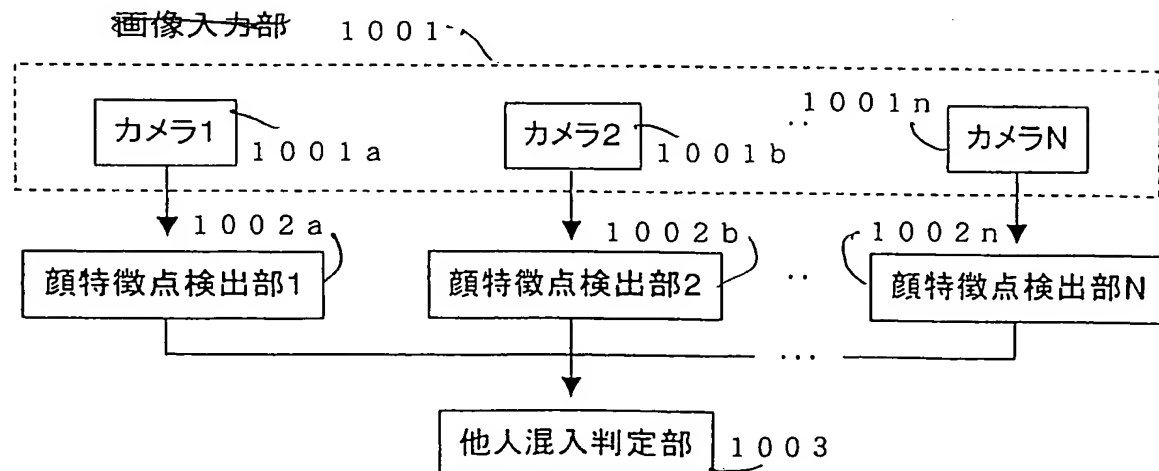


Fig. 11

